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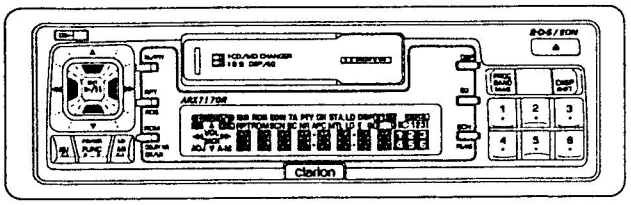
Service Dept.-35-2, Hakusan 5-chome, Bunkyo-ku, Tokyo, 112 Japan Tel: 03-3813-5151 Fax: 03-3814-2550

clarion Service Manual

Published by Service Dept.



RDS-EON/FM · MPX/MW/LW RADIO CASSETTE COMBINATION WITH DSP/EQ/CD CHANGER CONTROL

Model ***ARX7170R***

(PE-9915E)

■SPECIFICATIONS:

Radio section
Frequency Range : LW 153kHz to 279kHz
MW 531kHz to 1,602kHz
FM 87.5MHz to 108.0MHz

Tape deck Section
Reproduction system : Auto reversing
4 track,2 channel stereo
cassette tape playback
(Monaural also capable)
Tape speed : 4.76cm/sec.(1-7/8ips)

General Section
Power output : 30W×4
Speaker Impedance : 4Ω×4
Load impedance : 10kΩ×4 (Line out)
10kΩ×2 (Non fader out)
Power Supply Voltage : 14.4V(10.8V to 15.6V allowable), negative ground
Current Consumption : Less than 10A
Dimensions : 178(W)×50(H)×152(D)mm
Weight : 1.5kg

●Dolby noise reduction is manufactured under license from Dolby Laboratories Licensing Corporation.
●"DOLBY" and the double-D symbol ⊡ are trademarks of Dolby Laboratories Licensing Corporation.

Specifications and design are subject to change without notice for further improvement.

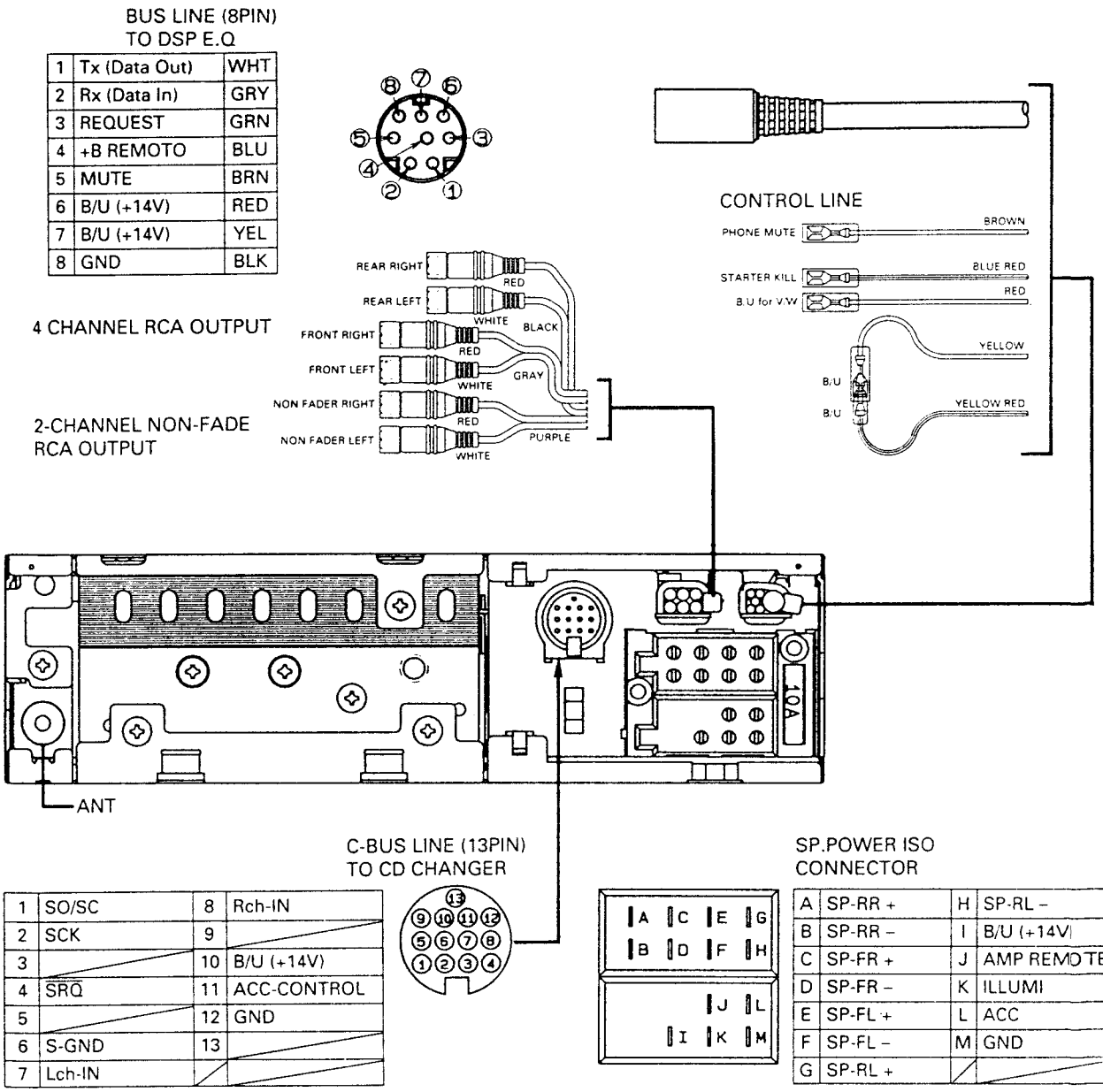
■COMPONENTS:

●PE-9915E-A

Main unit		1
Mounting bracket (univ.)	300-9035-81	1
DCP case	335-4848-00	1
Outer escutcheon	370-9006-00	1
Parts bag	———	1
Hook plate	330-8216-01	(2)
Lead holder	335-0833-01	(1)
Screw	716-0726-01	(1)

Printed in Japan 298-5218-00 JAN. 1995 Ⓜ
ARK 7170R

■ REAR VIEW AND CONNECTORS:



■ADJUSTMENT:

●FM SECTION

Item	Procedure
S-meter	1.Connect the digital volt-meter to TP101. 2.Input the 98.1MHz/30dB(30%,400Hz)signal and adjust the level to 2.4V±0.1V by VR101.
Stop sensitivity	1.Input the 98.1MHz/28dB(30%,400Hz)signal. 2.Connect the GND to TP103. 3.Adjust VR102 so that the voltage of TP102 is high.(or seek up tuning stops)

●TAPE SECTION

Item	Procedure
Dolby level	1.Insert a Dolby level test tape(400Hz-200nWb/m),connect the milli-volt- meter to TP-L,TP-R and GND. 2.Adjust VR201 and VR202 to obtain an output of 388mV+1/-1dB at FWD and REV direction. (Dolby switch:OFF)

■ μPD78064GF-025-3BA 052-7008-01 Microcomputer for display.

Outward Form

100-pin Plastic QFP

Terminal Description

Pin No.	Symbol	I/O	Function
100 1 2	M DISP SI M DISP SO M DISP SCK	I O I/O	Terminal to input and output bus line data to master side.
3 4	BB RX BB TX	I O	Terminal to transmit and receive start/stop of synchronous communications.
5 6	NC	–	Not in use.
7 8	X 2 X 1	– I	System clock terminal. (4.19MHz)
9	V_{DD}	–	Power supply terminal. (+ 5V).
10 11	NC	–	Not in use.
12	RESET	I	Terminal to input reset signal.
14	NC	–	Not in use.
15	BB REQ	O	Terminal to call for communication permission.
16	DISP BUSY	I	Terminal to input signal from master side.
17 18	NC	–	Not in use.
19 〜 24	KI 0 〜 KI 5	I	Terminal to input key scan signal.
25 〜 35	NC	–	Not in use.
27	GMD	–	GND terminal.
36	AV_{DD}	–	A/D power supply voltage terminal.
37	AVref		A/D reference voltage terminal.
38 〜 42	NC	–	Not in use.
40	V_{SS}	–	GND terminal.
43 〜 46	KO 0 〜 KO 3	O	Terminal to output key scan signal.
47 〜 50	NC	–	Not in use.
48	DISP REQ	O	Terminal to input REQ signal from master micro computer.
51 〜 54	COM 0 〜 COM3	O	Pins for output of LCD common signal.
55	BIAS	O	Pin for output of external dividing resistance cutting signal.
56 〜 58	VLC 0 〜 VLC 2	–	Power pins for LCD driving.
59	V_{SS}	–	GND terminal.

Pin No.	Symbol	I/O	Function
60 〜 99	SEG 0 〜 SEG 39	O	Pins for output of LCD segment signal.

Key Matrix Table

Note) Some of the sets equipped with this microcomputer are not provided with all the above keys.

KEY IN / KEY OUT	KI 0 (52 pin)	KI 1 (53 pin)	KI 2 (54 pin)	KI 3 (55 pin)	KI 4 (56 pin)	KI 5 (57 pin)
KO 0 (36 pin)	ADJ		A-M	DSP	EQ	RDM
KO 1 (37 pin)	V-DW	S-UP	SCN	4	5	6
KO 2 (38 pin)	V-UP	S-DW	RPT	1	2	3
KO 3 (39 pin)		ENT	ISR TA/PTY (*1)	BAND	DISP	

(*1) Key specification depends on the destination.
Japan, North America and the third area : ISR
Europe : TA/PTY

■ EXPLANATION OF ICs

μPD78058GC-046-3B9 052-3318-01 System Controller
■ μPD78058GC-045-3B9 052-3317-01 (Master Microcomputer)
μPD78058GC-044-3B9 052-3316-01

* 052-3318-01, 052-3316-01 and 052-3317-01 are not compatible with each other.

Outward Form

80-pin plastic QFP

Terminal Description

(052-3318-01)

Note: Only new microcomputers are described here.

No.	Symbol	I/O	Function
1 ~ 3	GND	–	GND terminal.
4 ~ 6	AV_{SS}	–	GND terminal for A/D.
7	AVref 1	–	A/D reference voltage terminal (+5V).
8 9 10	SI 2 SO 2 SCK 2	–	Connected to GND.
11 12	DISP SI DISP SO	I O	Terminal to input and output data of serial bus line.
13 14 15	DISP SCK DISP RESET DISP BUSY	O O I	Terminal to input and output signal to DCP microcomputer.
16 17 18	C-BUS SI C-BUS SO C-BUS SCK	I O O	C-BUS line SI/SO/SCK terminal on master side.
19 ~ 26 27 ~ 29	AD 0 ~ AD7 A 8 ~ A 10	I/O O	Address/data bus for SRAM interface.
30	NC	–	Not in use.
31	SRQ	I	C-BUS line SRQ terminal on master side.
32	ACC CONT	O	ACC controlling terminal of serial bus line.
33	V_{SS}	–	GND terminal.
34	ILLUMI 1	O	"H" is outputted in the case of AMBER.
35	IJJUMI 2	O	"H" is outputted in the case of GREEN.
36	ACC REM	O	Terminal to control ON/OFF of 5V system power supply (ACC 5V).
37	REM + B	O	Terminal to control ON/OFF of + B (audio system) power supply.
38	MUTE	O	Terminal to output SYSTEM MUTE signal.
39	BLINK LED	O	BLINKING LED terminal.
40	RD	O	Strobing terminal for SRAM lead.
41	WR	O	Strobing terminal for SRAM light.
42	CE	O	Terminal to enable SRAM chip.
43	ASTB	O	Latch terminal for SRAM light.
44 45	GND	–	GND terminal.
46 47 48	EVOL CLK EVOL DATA EVOL CE	O	Terminal to transfer serial data to electric volume.
49	PHONE INT	I	Terminal to input interruption signal from telephone.
50 ~ 53	GND	–	GND terminal.
54 55	MOTOR – MOTOR +	O	Terminal to control direction of motor revolution of flap.
56	REM MOTOR	O	Flap block battery ON/OFF control terminal. Flap power ON: H
57	DR SENC	I	Input terminal to detect opening and closing of cassette door. Pack In : "H" No pack : "L"
58	OPEN SENC	I	Terminal to detect opening of flap.
59	CLOSE SENC	I	Terminal to detect closing of flap.
60	RESET	I	Terminal to input reset signal.
61	DISP REQ	I	Terminal to input REQ signal from DCP microcomputer.
62	B/U	I	Input terminal for BACK UP detection.
63	A_{CC} IN	I	Input terminal for ACC ON/OFF detection. "H" at ACC ON. "L" at ACC OFF.
64	EJECT	I	Input terminal for EJECT key detection. The terminal turns "H" when key is pressed.
65	ILLUMI DET	I	Input terminal for ILLUMI detection.
66	DCP IN	I	Input terminal for DCP detection. The terminal turns "L" when DCP is detected.
67	FUNCTION	I	Input terminal for power (function) SW detection. The terminal turns "L" when FUNCTION SW is ON.
68	V_{DD}	–	Power supply voltage terminal (+5V).
69 70	X 2 X 1	–	System clock terminal.
71	V_{SS}	–	GND terminal.
72	NC	–	Not in use.
73	SELF CHECK	I	Terminal for SELF CHECK.
74	AV_{DD}	–	A/D power supply voltage terminal (+5V).
75	AVref 0	–	A/D reference voltage terminal (0V).
76 ~ 80	GND	–	GND terminal.

MOTOR +	MOTOR –	Direction of flap movement
H	H	Brake
H	L	In the direction of OPEN
L	H	In the direction of CLOSE
L	L	—

Differences

052-3316-01 · (052-3317-01)

Pin No.	Symbol	I/O	Function
50	BEEP	O	BUZZER output terminal which sends signal to turns the buzzer on.
51 ~ 58	NC	–	Not in use.
59	2105/2106 (9914/9915)	I	Terminal for input of PE-2105/PE-2106 selector signal. "H" in PE-2105 mode. ("H" in PE-9914 mode.)
76	TEMP (NC)	O (–)	The terminal judges high temperature when input voltage drops below 2.46V.

■PARTS LIST:

○Switch PWB

REF NO.	PART NO.	DESCRIPTION	QTY
D101-104	001-0516-00	Diode MA111	4
D105,106	001-0644-00	Diode MA113	2
C103	042-0416-02	Electro-C 10V10 μF	1
IC101	052-7008-01	IC μPD78064GF-025-3BA	1
X101	060-1009-00	Cera-Resonator 4.195MHz	1
C111	178-2232-78	Ceramic-chip-C 0.022 μF	1

Note) Several different parts listed in the column are alternative parts. One of those parts is used in the set.

○Main PWB

REF NO.	PART NO.	DESCRIPTION	QTY
D315	001-0188-01	Diode 1S1885A	1
D304,306,317,319	001-0330-00	Diode 1SS119	4
D101	001-0366-90	Diode LTZ-MR15	1
D201	001-0377-45	Diode MA4082H	1
D103,301	001-0377-47	Diode MA4091M	2
D102,108	001-0378-00	Diode 1SV125	2
D104-106,202 D312-314	001-0516-00	Diode MA111	7
D318	001-0659-00	Diode SLP-181B-51	1
TR301	009-0666-0L	Choke	1
L102	010-2003-04	Coil	1
L107	010-2174-20	Coil 47 μH	1
L301,302	010-2199-16	Coil 2.2 μH	2
L101	010-2230-00	Coil 0.15 μH	1
L103	010-2230-14	Coil 2.2 μH	1
L104,105,201	010-2230-26	Coil 22 μH	3
L106	010-2230-38	Coil 220 μH	1
VR102,201,202	012-5123-06	Variable resistor 10kΩ	3
VR101	012-5123-15	Variable resistor 470kΩ	1
IC203,207	051-0350-55	IC NJM4558M	2
IC306	051-0869-05	IC MB3771PF	1
IC202	051-1038-01	IC CXA1102M	1
IC106	051-1046-46	IC LC3517BML-12	1
IC105	051-1051-05	IC TC74HC573AF	1
IC103	051-1819-00	IC SAA6579T	1
IC307	051-1905-00	IC AN77L05	1
IC201	051-2004-00	IC HA13150A	1
	051-2004-10	IC HA13150AGS	
IC206	051-5004-00	IC CXA1946Q	1
IC204,205	051-5802-00	IC TA2050S	2
IC101	051-6201-00	IC LC72146M	1
IC304	051-7400-06	IC HD74LS07FP	1
IC104	052-1301-10	IC μPD78014GC-641-AB8	1
IC301	052-3317-01	IC μPD78058GC-045-3B9	1
SUP101	060-0122-10	Surge protector	1
X301	060-0266-00	Ceramic resonator 4.19MHz	1
X103	060-0320-00	Ceramic resonator 8.38MHz	1
X101	061-1066-00	Crystal 7.2MHz	1
X102	061-3013-00	Crystal 4.332MHz	1
Q110,111,308	100-1162-00	Transistor 2SA1162	3
Q306	100-1298-00	Transistor 2SA1298	1
Q310	101-1143-50	Transistor 2SB1143ST	1
Q312	101-1237-00	Transistor 2SB1237	1
Q313	101-1243-00	Transistor 2SB1243	1
Q302,304,305,307 Q317	102-2712-00	Transistor 2S2712	5
Q106,107	102-2712-51	Transistor 2SC2712Y,G,L	2
Q104,201,202 Q204-208	103-1306-00	Transistor 2SD1306	8
Q321,322	103-1504-00	Transistor 2SD1504	2
Q203,315	103-1683-00	Transistor 2SD1683	2
Q109	108-0241-50	Transistor 2SK241Y,GR	1
Q105	125-0002-06	Transistor RN2406	1
Q101-103,108 Q112,301,303,316	125-2004-03	Transistor RN1403	8
Q318,319	125-2004-06	Transistor RN1406	2
R342	032-0108-00	Resistor 1.8Ω	1
C211-218,221,320	172-1041-11	Polyestor-C 0.1 μF	10
C307	172-4731-11	Polyestor-C 0.047 μF	1
C121	172-6831-11	Polyestor-C 0.068 μF	1
C115-118,142,289 C290,325,328,329	176-1011-00	Ceramic-chip-C 100pF CH	10
C127	176-1501-00	Ceramic-chip-C 15pF CH	1
C128	176-1801-00	Ceramic-chip-C 18pF CH	1
C110,139,318	176-2211-00	Ceramic-chip-C 220pF CH	3
C134	176-4701-00	Ceramic-chip-C 47pF CH	1
C133	176-8201-00	Ceramic-chip-C 82pF CH	1
C138,304,313,314	178-1022-78	Ceramic-chip-C 1000pF	4
C125,291,323,324	178-1032-78	Ceramic-chip-C 0.01 μF	4
C135,236,274	178-1042-78	Ceramic-chip-C 0.1 μF	3
C120	178-1532-78	Ceramic-chip-C 0.015 μF	1
C237,275	178-1822-78	Ceramic-chip-C 1800pF	2
C101-103,111-113 C136,140,144,305 C316,322	178-2232-78	Ceramic-chip-C 0.022 μF	12
C241,271	178-2722-78	Ceramic-chip-C 2700pF	2
C130	178-3312-78	Ceramic-chip-C 330pF	1
C123	178-3332-78	Ceramic-chip-C 0.033 μF	1
C114	178-4722-78	Ceramic-chip-C 4700pF	1
C256,315	178-4732-78	Ceramic-chip-C 0.047 μF	2
C132,251-254,283 C285	178-5612-78	Ceramic-chip-C 560pF	7
C222,223	042-0447-00	Electro-C 16V2200 μF	2
C126,205	042-0452-01	Electro-C 10V220 μF	2
C124,244,246,250 C258,260,262,266	183-1053-61	Electro-C 50V1 μF	8
C201,210,220,239 C242,243,245,249 C259,265,267-270 C272,286-288,310 C311,321	183-1063-31	Electro-C 16V10 μF	21
C317	183-1073-17	Electro-C 6.3V100 μF	1
C228	183-1073-21	Electro-C 10V100 μF	1
C209,225	183-2243-61	Electro-C 50V0.22 μF	2
C129	183-2253-61	Electro-C 50V2.2 μF	1
C137	183-2263-11	Electro-C 6.3V22 μF	1
C122,203,207,224 C277-280	183-4753-51	Electro-C 35V4.7 μF	8
C119,131,219,261 C263,281,306	183-4763-11	Electro-C 6.3V47 μF	7
C231	183-4763-31	Electro-C 16V47 μF	1
C202,204,238,276	183-6843-61	Electro-C 50V0.68 μF	4

■ μPD78014GC-641-AB8 052-1301-10 Tuner Controller

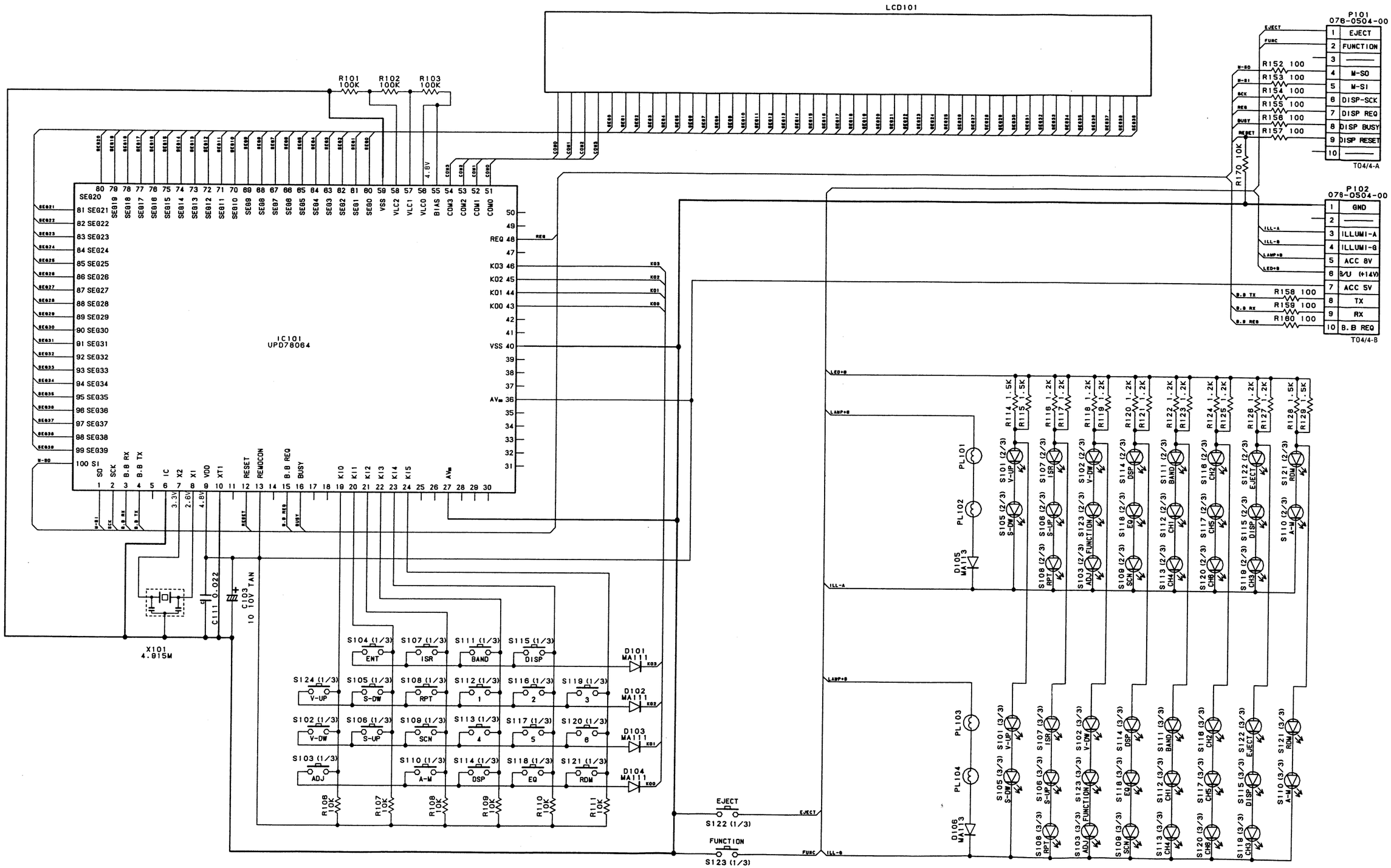
Outward Form

64-pin plastic QFP

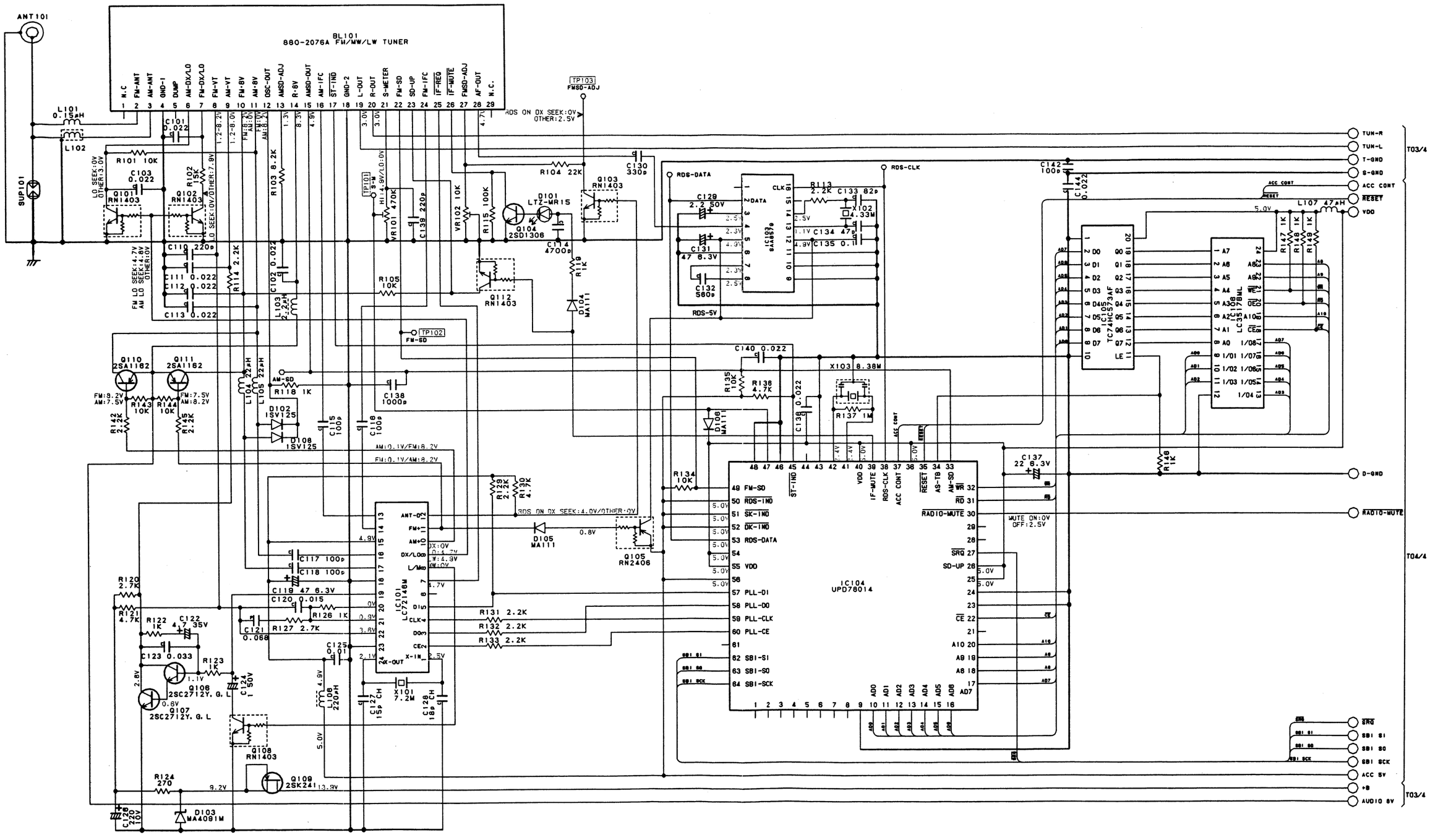
Terminal Description

No.	Symbol	I/O	Function
1	SD UP	O	Output when measuring a PLL setting IF count.
2	LPF CONT	O	PLL low-pass filter control terminal.
3	RDS MUTE	O	"H" is output for 1 second both at power (POWER & ACC)-on and AM to FM band switching.
4 ≀ 7	OUT 1 ≀ OUT 4	O	"H"/"L" is simply output by receiving an arbitrary command from the master.
8	NC	–	Not in use.
9	GND	–	GND terminal.
10 ≀ 17	SRAM AD 0 ≀ SRAM AD 7	I/O	SRAM control. Address & data line. Port commonly used for the lower 8-bit address and 8-bit data.
18 ≀ 20	SRAM A 8 ≀ SRAM A 10	O	SRAM control. Address line. Upper 3-bit address output only port.
21	NC	–	Not in use.
22	$\overline{\text{SRAM CE}}$	O	SRAM control chip enable. "L" output at any time while the power (POWER & ACC) is turned on.
23	S CW	I	Initial setting CW detection enable ("H")/disable ("L").
24	GND	–	GND terminal.
25	S RDS IC	I	Initial setting RSD-IC selection. PHILIPS ("H")/SANYO ("L"). Disabled when RDS ID signal is at "H" and enabled at "L".
26	S SD UP	I	Initial setting SD UP enable ("L")/disable ("H").
27	$\overline{\text{SRQ}}$	O	C-BUS communication SRQ output.
28	NC	–	Not in use.
29	REM	O	Remote signal output. "L" output at any time while the power (POWER & ACC) is turned on.
30	R MUTE	O	RADIO MUTE output. MUTE ON at "L". Turn on when changing the reception frequency.
31	$\overline{\text{SRAM RD}}$	O	SRAM control. Data read signal. "L" output when executing a data read instruction from the SRAM.
32	$\overline{\text{SRAM WR}}$	O	SRAM control. Data write signal. "L" output when executing a data write instruction to the SRAM.
33	AM SD	I	AM band. With-station detection signal input.
34	SRAM ASTB	O	SRAM control timing signal. Always output by effecting the memory expansion mode.
35	RESET	I	Microcomputer reset signal.
36	INITIAL AM SD	I	Initial setting AM band SD detection. Yes ("H")/No ("L") designation. "H" : Performs SD detection.
37	ACC CONT	I	ACC signal (Terminal interrupt). "H" at ACC ON. "L" at ACC OFF.
38	RDS IC CLK	I	RDS IC communication. Clock input. (Terminal interrupt)
39	IF MUTE	O	IF MUTE terminal.
40	VDD	–	Supply voltage terminal.
41 42	XTAL	I	Main clock oscillator (8.38 MHz) connection terminal.
43	GND	–	GND terminal.
44	NC	–	Not in use.
45	$\overline{\text{ST ID}}$	I	Stereo signal input. Stereo ("L")/monaural ("H").
46	A GND	–	A/D converter GND terminal.
47	S Meter	I	Electric field intensity (S meter) input (A/D conversion).
48	CW	I	CW (carrier) signal input (A/D conversion). Only when initial setting CW detection is enabled.
49	SD	I	Station enable detection signal input.
50	$\overline{\text{RSD ID}}$	I	RDS station recognition signal input. RDS station ("L").
51	$\overline{\text{SK ID}}$	I	ARI station SK signal input. SK-ON ("L").
52	$\overline{\text{DK ID}}$	I	ARI station DK signal input. DK-ON ("L").
53	RDS IC DATA	I	RDS IC communication data input. The port is read directly at clock interrupt time.
54	NC	–	Not in use. (+ 5V pullup or GND)
55	AVDD	–	A/D converter supply power.
56	A VREF	I	A/D converter reference voltage input.
57	PLL DI	I	PLL IC serial communication data input. Takes in the IF count data.
58	PLL DO	O	PLL IC serial communication data output. Sets the frequency divider, general purpose port data, etc.
59	PLL CLK	O	PLL IC serial communication clock output. Clock frequency: 524 kHz.
60	PLL CE	O	PLL IC serial communication chip enable output.
61	NC	–	Not in use.
62	C-BUS SBI	I	C-BUS communication data input.
63	C-BUS SBO	O	C-BUS communication data output.
64	C-BUS SCK	I	C-BUS communication clock input. The clock frequency depends on the master microcomputer.

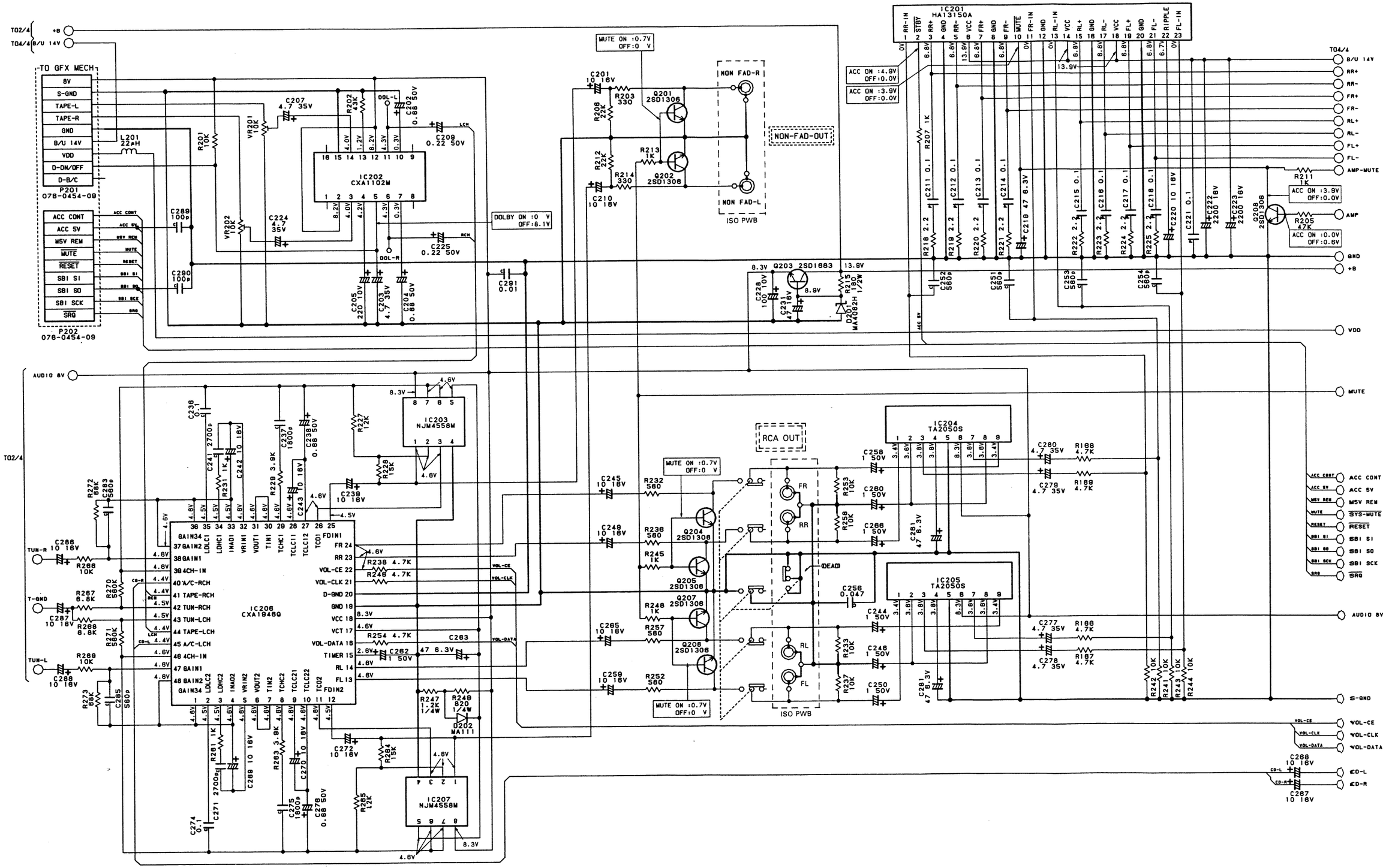
■ CIRCUIT DIAGRAM: 1/4



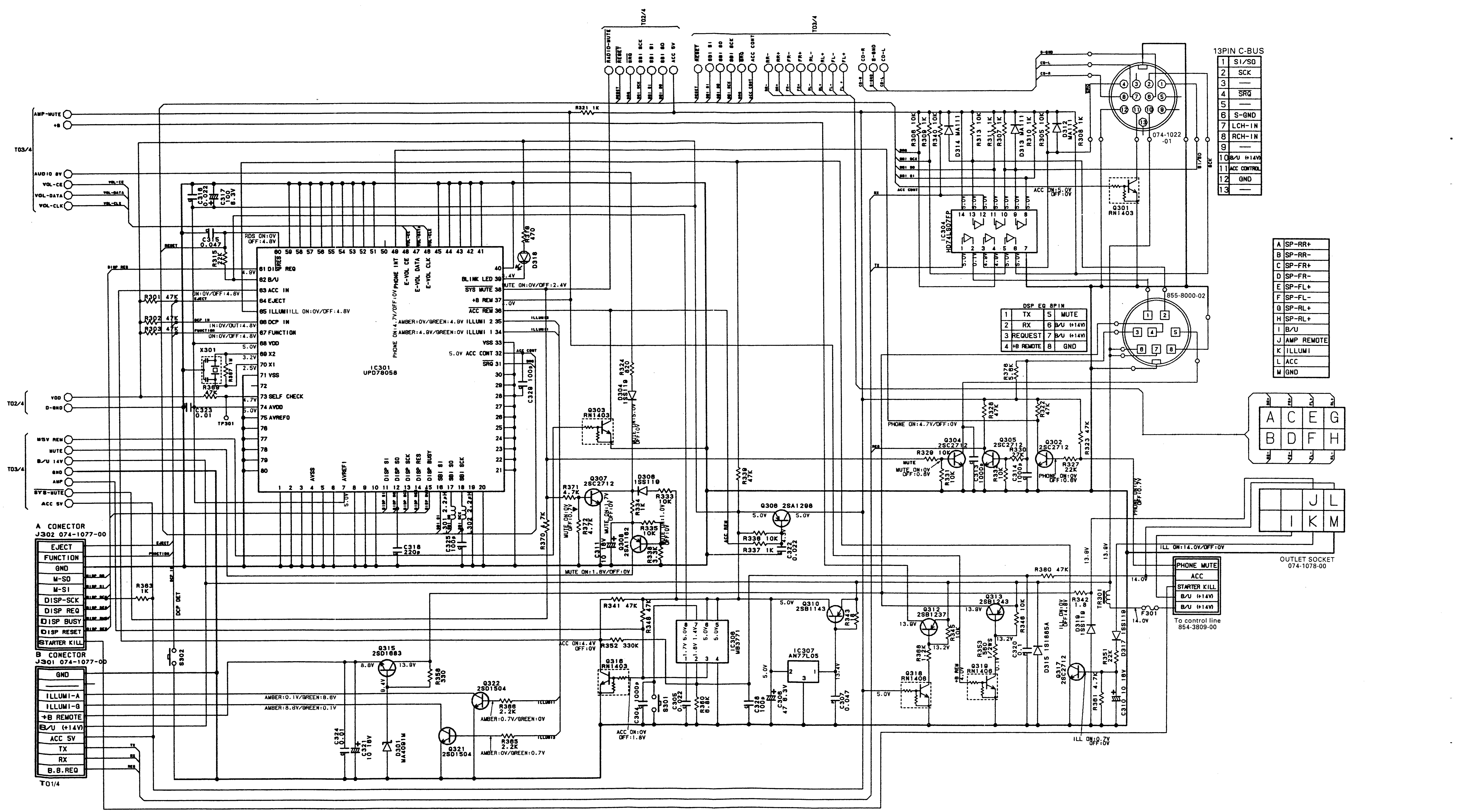
■ CIRCUIT DIAGRAM: 2/4



■ CIRCUIT DIAGRAM: 3/4

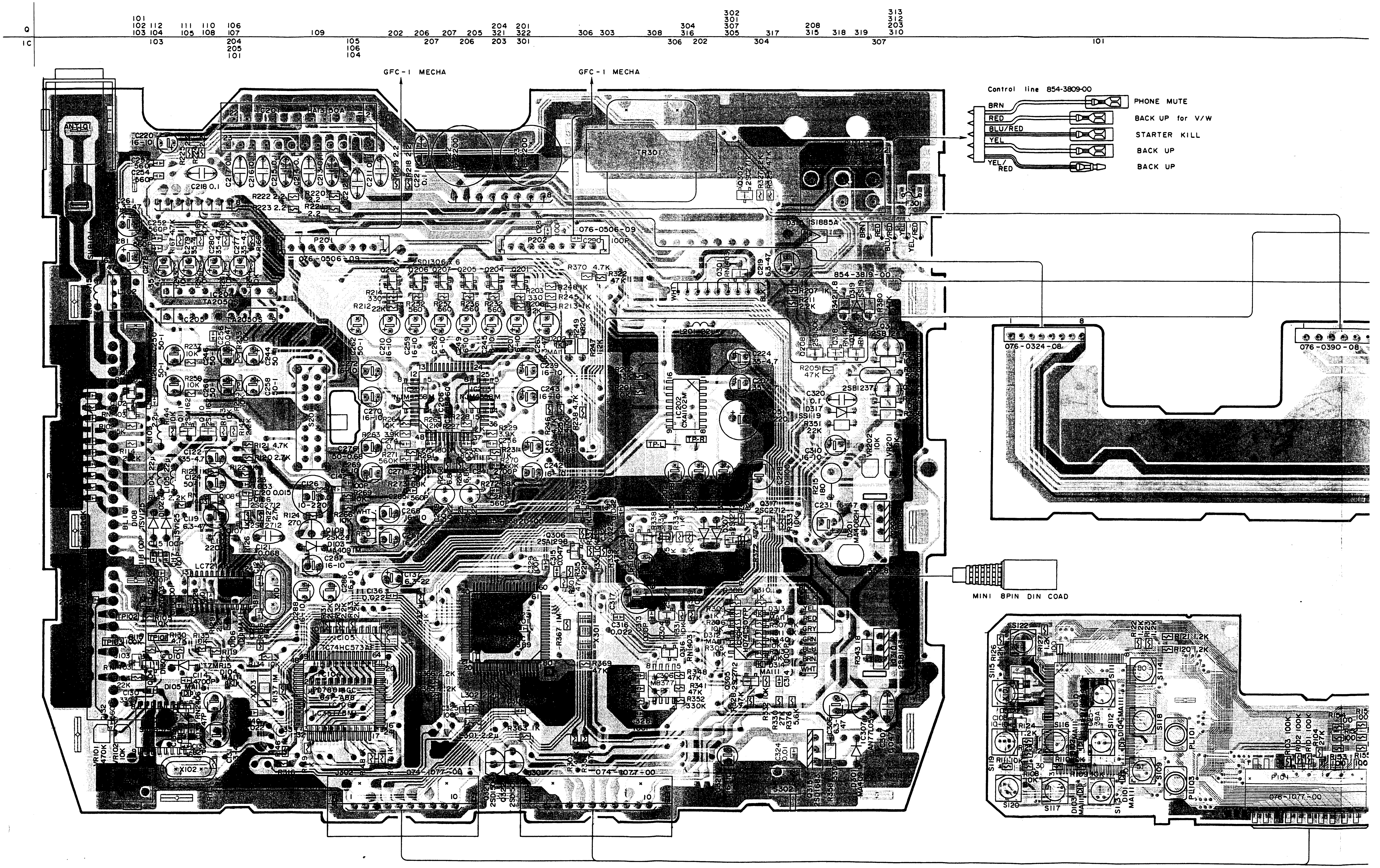


■ CIRCUIT DIAGRAM: 4/4



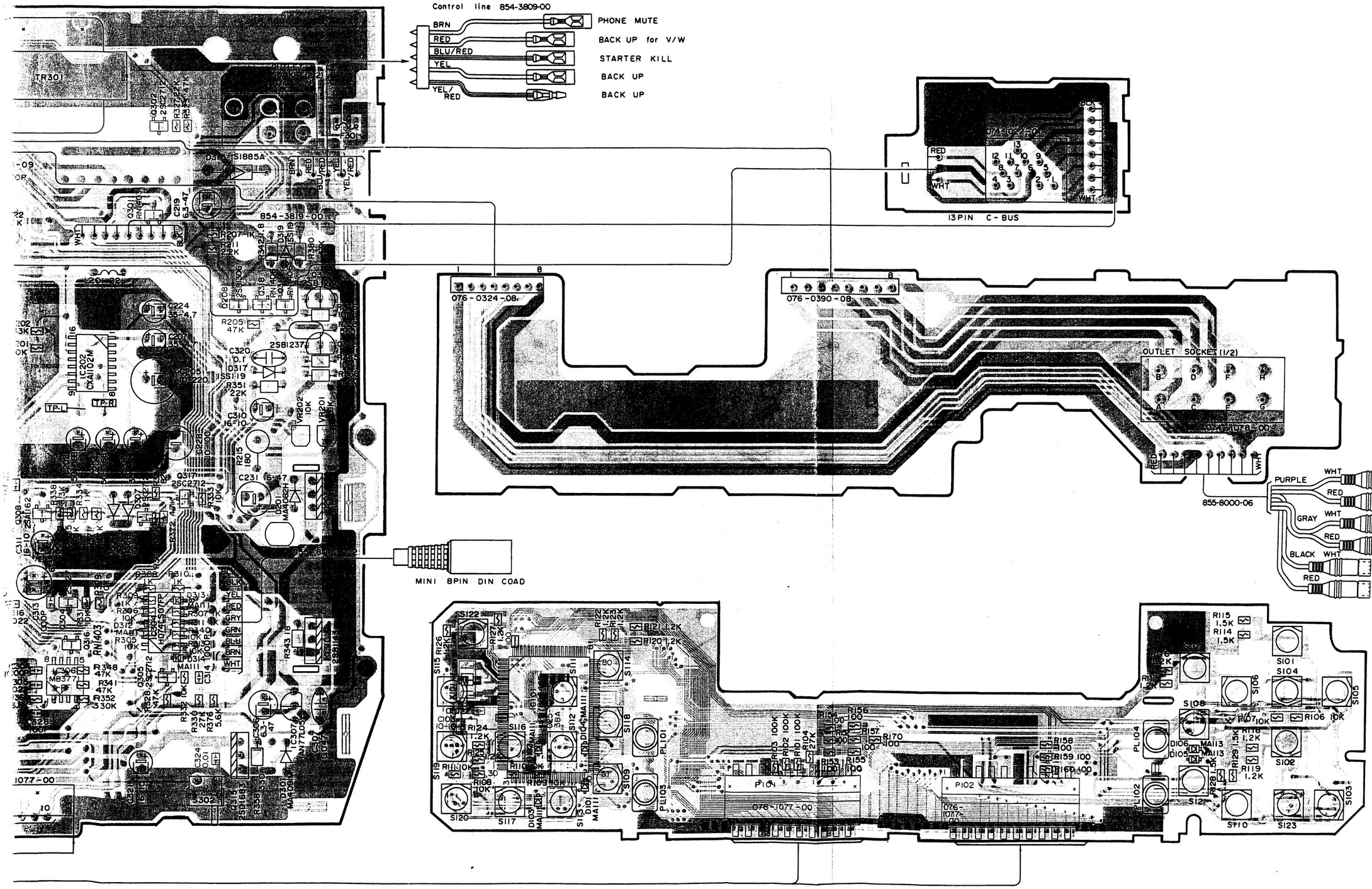
T03/4
AMP-MUTE
+B
AUDIO 8V
VOL-CE
VOL-DATA
VOL-CLK
T02/4
VDD
D-GND
MSV REM
MUTE
B/U 14V
GND
AMP
SYS-MUTE
ACC 5V
A CONECTOR
J302 074-1077-00
EJECT
FUNCTION
GND
M-SO
M-SI
DISP-SCK
DISP REQ
DISP BUSY
DISP RESET
STARTER KILL
B CONECTOR
J301 074-1077-00
GND
ILLUMI-A
ILLUMI-G
+B REMOTE
B/U (+14V)
ACC 5V
TX
RX
B.B.REQ
T01/4
IC301
UPD78058
RADIO-MUTE
RESET
SRQ
SBI SCK
SBI SI
SBI SO
ACC 5V
ACC CONT
RR-
RR+
FR-
FR+
RL-
RL+
FL-
FL+
CD-R
S-GND
CD-L
IC304
HD74LS07FP
13PIN C-BUS
1 SI/SO
2 SCK
3 —
4 SRQ
5 —
6 S-GND
7 LCH-IN
8 RCH-IN
9 —
10 B/U (+14V)
11 ACC CONTROL
12 GND
13 —
074-1022-01
855-8000-02
DSP EQ 8PIN
1 TX
2 RX
3 REQUEST
4 +B REMOTE
5 MUTE
6 B/U (+14V)
7 B/U (+14V)
8 GND
A SP-RR+
B SP-RR-
C SP-FR+
D SP-FR-
E SP-FL+
F SP-FL-
G SP-RL+
H SP-RL+
I B/U
J AMP REMOTE
K ILLUMI
L ACC
M GND
OUTLET SOCKET
074-1078-00
PHONE MUTE
ACC
STARTER KILL
B/U (+14V)
B/U (+14V)
To control line
854-3809-00
IC306
MB3771
IC307
AN77L05

■ PRINTED WIRING BOARD:



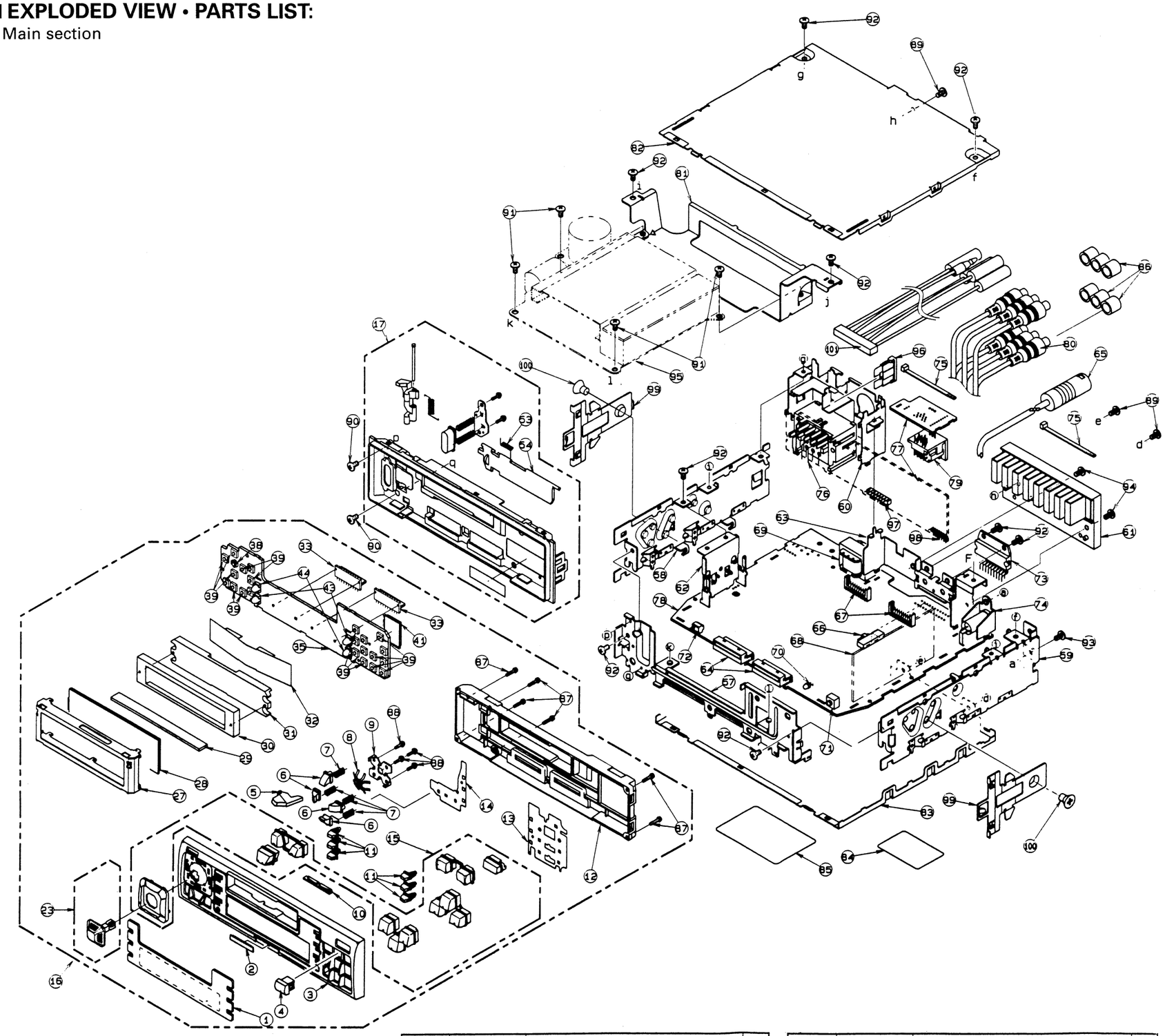
302 301 307 305 304 316 308 306 202 317 304 208 315 318 319 313 312 203 310 307 101

ECHA



■ EXPLODED VIEW • PARTS LIST:

◎ Main section



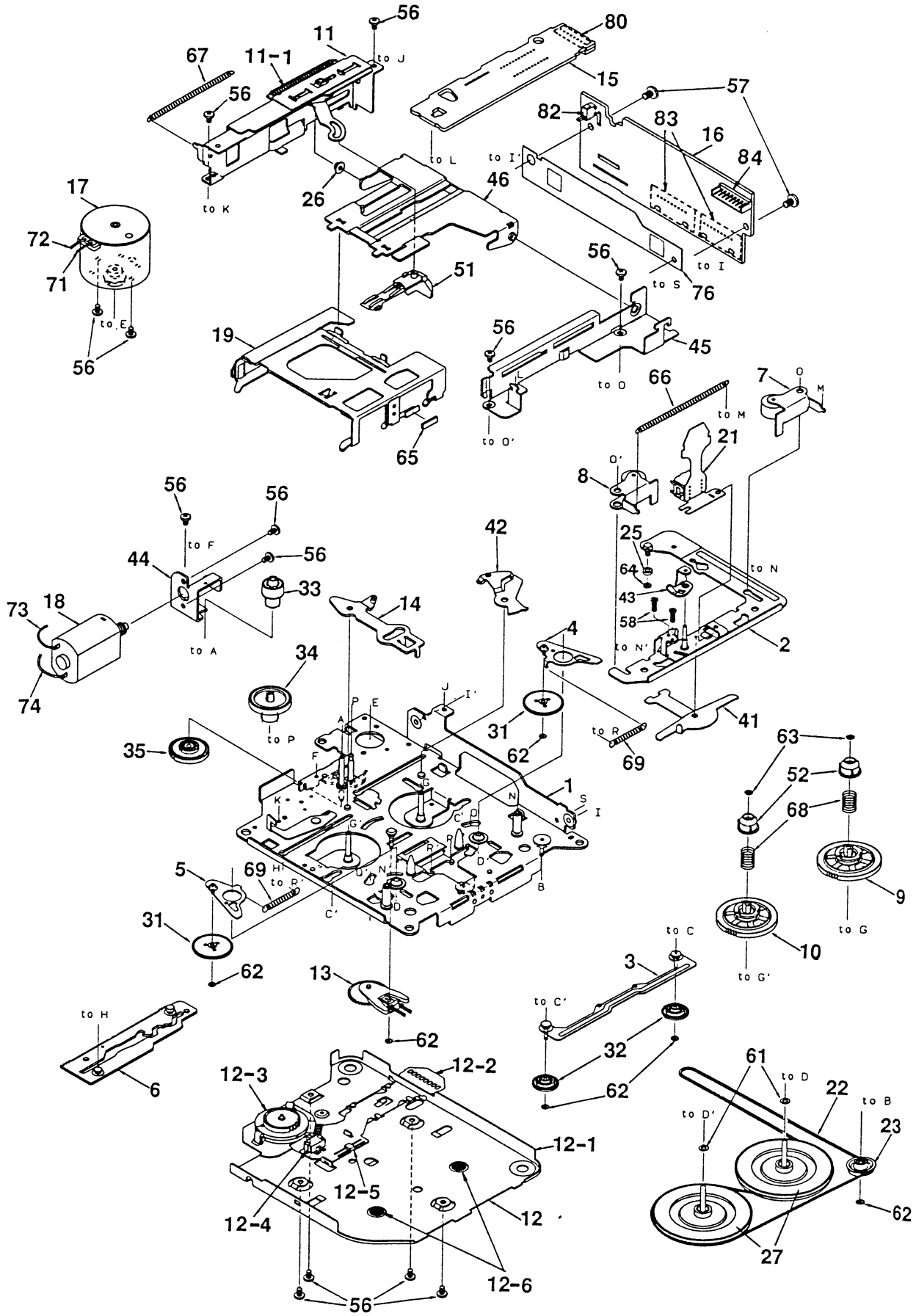
REF NO.	PARTS NO.	DESCRIPTION	QTY
1	373-0772-03	Dial-cover	1
2	378-0134-00	Badge clarion	1
3	370-9002-01	Escutcheon	1
4	335-4847-01	IR filter	1
5	382-7665-00	Button ♯RELEASE	1

REF NO.	PARTS NO.	DESCRIPTION	QTY
6	335-4846-00	Push plate	4
7	750-3172-00	Spring	4
8	750-3149-00	Spring	1
9	331-0587-00	Spring holder	1
10	335-4844-00	Illumi plate ♯DUST-COVER	1

REF NO.	PARTS NO.	DESCRIPTION	QTY
11	382-7664-00	Button ♯LCD SIDE	6
12	335-4843-00	Rear-cover ♯clarion	1
13	347-5110-00	Film holder ♯LEFT	1
14	347-5111-00	Film holder ♯RIGHT	1
15	947-0391-00	Button assy	1
16	940-1719A	Escutcheon Ass'y	1
17	940-1727A	Inner Escutcheon Ass'y	1
23	947-0385-01	Konb assy	1
27	331-0589-00	LCD-cover	1
28	379-1028-41	Indicater	1
29	345-7646-00	Rubber connector	1
30	347-5112-00	Film ♯LCD	1
31	335-4849-00	Illumi plate ♯LCD	1
32	347-5113-00	Reflector	1
33	076-0504-00	Plug ♯DCP 10P	2
35	039-0448-00	Switch PWB	1
38	013-6501-02	Switch	1
39	013-6501-01	Switch	22
41	052-7008-00	IC ♯ μPD78064GF-021-3BA	1
43	017-0438-02	Pilot lamp ♯Amber	2
44	017-0438-03	Pilot lamp ♯Green	2
53	750-2626-00	Spring ♯DUST-COVER	1
54	320-0525-03	Pilot lamp *Amber (4V 150mA)	1
57	309-0657-00	Pilot lamp *Green (4V 150mA)	1
58	305-0239-00	Side-cover ♯LEFT	1
59	305-0240-00	Side-cover ♯RIGHT	1
60	331-0586-00	Connector-bracket	1
61	313-1611-00	Heat sink ♯POWER	1
62	313-1612-00	Heat sink	1
63	331-0584-00	IC-holder	1
64	074-1077-00	Outlet socket	2
65	855-8000-02	Mini din cord	1
66	013-5102-00	Slide switch ♯OUT-IN	1
67	076-0506-09	Mech-connector ♯GFC-1	2
68	880-2076A	Block-kit	1
69	009-0666-0L	Choke	1
70	001-0659-00	Diode	1
71	013-3932-00	Switch ♯RESET	1
72	013-3988-00	Switch ♯SPPB62	1
73	051-2004-00	IC ♯HA13150A	1
74	092-9000-00	Ant-recept	1
75	335-0833-01	Lead-holder	1
76	074-1078-00	Outlet socket	1
77	039-0432-00	ISO PWB	1
78	039-0446-00	Main PWB	1
79	074-1022-01	Outlet socket	1
80	855-8000-06	RCA pin cord	1
81	331-0585-00	Mech-bracket	1
82	303-0450-00	Upper-cover	1
83	304-0438-00	Lower-cover	1
84	290-6302-00	Label ♯OUT/IN	1
85	286-8302-00	Set plate	1
86	345-3799-00	RCA cap	6
87	716-1674-0L	P-Tight screw	6
88	716-0778-00	Wave screw	4
89	702-3006-81	Tap screw	3
90	714-2004-17	Machine screw	2
91	714-2605-81	Machine screw	4
92	731-3006-80	Taptight	9
93	714-3005-81	Machine screw	1
94	731-3010-80	Taptight	2
95	930-0738-80	Tape mech ♯GFC-1	1
96	060-0057-06	Auto fuse ♯10A	1
97	076-0390-08	Plug	1
98	076-0324-07	Plug	1
99	750-2796-01	Spring	2
100	714-5008-41	Machine screw	2
101	854-3809-00	Extension lead	1

■EXPLODED VIEW · PARTS LIST:

◎Tape mechanism 930-0738-80(GFC-1)



NO	PART NO.	DESCRIPTION	QTY
1	960-4405-90	DECK PLATE-ASSY	1
2	960-4404-90	HEAD PLATE ASSY	1
3	960-4262-03	FF/REW-P-ASSY	1
4	960-4263-01	IDLER-P-ASSY F	1
5	960-4264-01	IDLER-P-ASSY R	1
6	960-4266-05	MODE PLATE-ASSY	1
7	960-4269-05	ROLLER ASSY F	1
8	960-4270-05	ROLLER ASSY R	1
9	960-4348-90	REEL ASSY F	1
10	960-4349-90	REEL ASSY R	1
11	960-4389-90	EJECT SUB-ASSY	1
11-1	750-3020-01	SW-PLATE SPRING	1
12	960-4338-01	BOTTOM SUB-ASSY	1
12-1	960-4295-02	BOTTOM P-ASSY	1
12-2	099-9926-01	FLEX PWB	1
12-3	013-3951-00	SWITCH•MODE	1
12-4	013-3953-00	SWITCH•Cr02	1
12-5	051-1776-01	IC NJL5801K-C	1
12-6	746-0767-00	WASHER	2
13	960-4282-99	DETECT-SUB-ASSY	1
14	960-4301-02	PLAY-L-ASSY GF	1
15	039-0053-00	SIDE PWB	1
16	039-0367-00	REAR-PWB	1
17	SMA-130-100	DC-MOTOR•MAIN	1
18	SMA-131-100	DC-MOTOR•POWER	1
19	960-4406-90	PACK GUIDE ASSY	1
21	011-0307-28	HEAD	1
22	602-0118-00	BELT	1
23	604-0046-00	TENSION PULLEY	1
25	610-0342-01	HEAD-P-ROLLER	1
26	610-0343-00	GUIDE A ROLLER	1
27	611-0091-02	FLYWHEEL	2
31	613-0285-02	IDLER GEAR	2

NO	PART NO.	DESCRIPTION	QTY
32	613-0286-02	FF/REW GEAR	2
33	613-0288-01	HERICAL GEAR	1
34	613-0289-01	GEAR A	1
35	613-0290-00	POWER GEAR	1
41	630-2718-00	CHANGE LINK	1
42	630-2598-04	EJECT LINK	1
43	630-2600-01	ADJUST LINK	1
44	630-2601-02	MOTER PLATE	1
45	630-2626-01	PWB FRAME	1
46	630-2642-01	GUIDE ARM	1
51	631-1992-01	PACK STOPPER	1
52	631-1993-01	SLIDE BUSH	2
56	716-0484-00	SCREW•M2X2.25 B	13
57	716-0761-01	PWB SCREW	2
58	716-0833-10	AZIMUTH SCREW	2
61	746-0624-00	WASHER	2
62	746-0724-00	WASHER	6
63	746-0761-00	WASHER	2
64	746-0762-00	WASHER	1
65	746-0883-00	CLEANING PAD	1
66	750-2946-02	PINCH SPRING	1
67	750-2947-02	EJECT-P-SPRING	1
68	750-2949-00	SLIDE SPRING	2
69	750-3148-00	IDLER P SPRING	2
71	800-4911-60	VINYL-COAT-WIRE•BLK	1
72	802-4911-60	VINYL-COAT-WIRE•RED	1
73	806-4914-60	VINYL-COAT-WIRE•BLU	1
74	809-4914-60	VINYL-COAT-WIRE•WHT	1
76	347-4080-00	INSULATOR	1
80	074-0881-08	OUTLET SOCKET•8P	1
82	013-3906-00	SWITCH	1
83	074-1012-09	OUTLET SOCKET•9P	2
84	076-0353-08	PLUG•8P	1

■PARTS LIST:

○Side PWB

REF NO.	PARTS NO.	DESCRIPTION	QTY
IC1	051-1546-10	IC BA3438S	1
C8,9	173-1231-10	Polyester-C 0.012μF	2
C1-4	175-3311-00	Chip-C 330pF	4
C12	175-5611-00	Chip-C 560pF	1
C6,7	042-0476-02	Electro-C 10V68μF	2
C11	183-1043-61	Electro-C 50V0.1μF	1
C14	183-2263-31	Electro-C 16V22μF	1
C13	183-4743-61	Electro-C 50V0.47μF	1
C10,15,16	183-4753-51	Electro-C 35V4.7μF	3
C5	183-4763-11	Electro-C 6.3V47μF	1

○REAR PWB

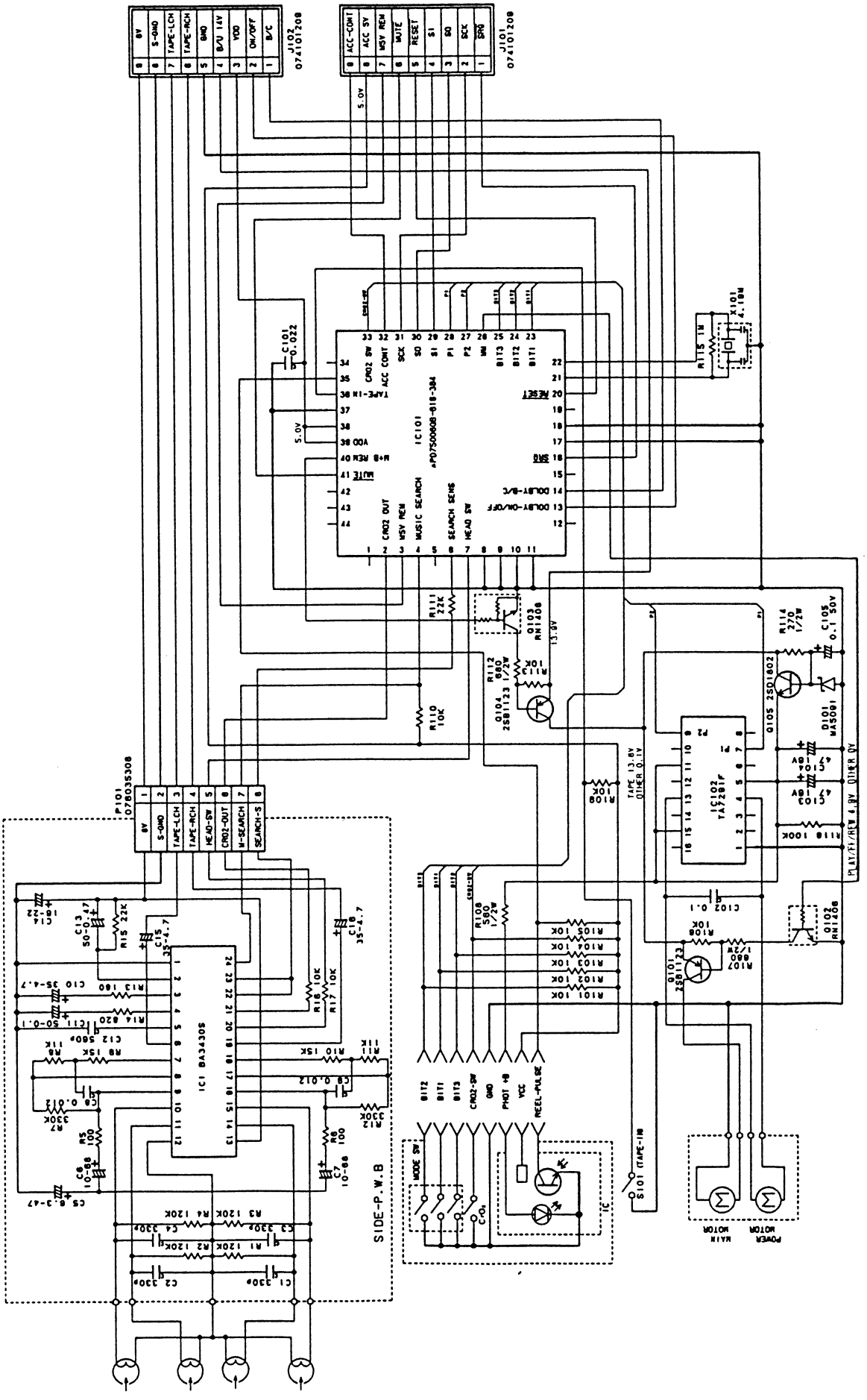
REF NO.	PARTS NO.	DESCRIPTION	QTY
D101	001-0595-17	Diode MA5091	1
IC102	051-1014-05	IC TA7291F	1
IC101	051-1647-02	IC μPD75068GB-616-3B4	1
X101	060-0266-00	Cera-resonator	1
Q101,104	101-1123-00	Transistor 2SB1123	2
Q105	103-1802-60	Transistor 2SD1802FA-R, S, T, U	1
Q102,103	125-2004-06	Transistor RN1406	2
C105	163-1063-30	Chip-C 50V0.1μF	1
C103,104	163-4763-30	Chip-C 16V47μF	2
C102	043-1601-10	Chip-C 0.1μF	1
C101	178-2232-78	Chip-C 0.022μF	1

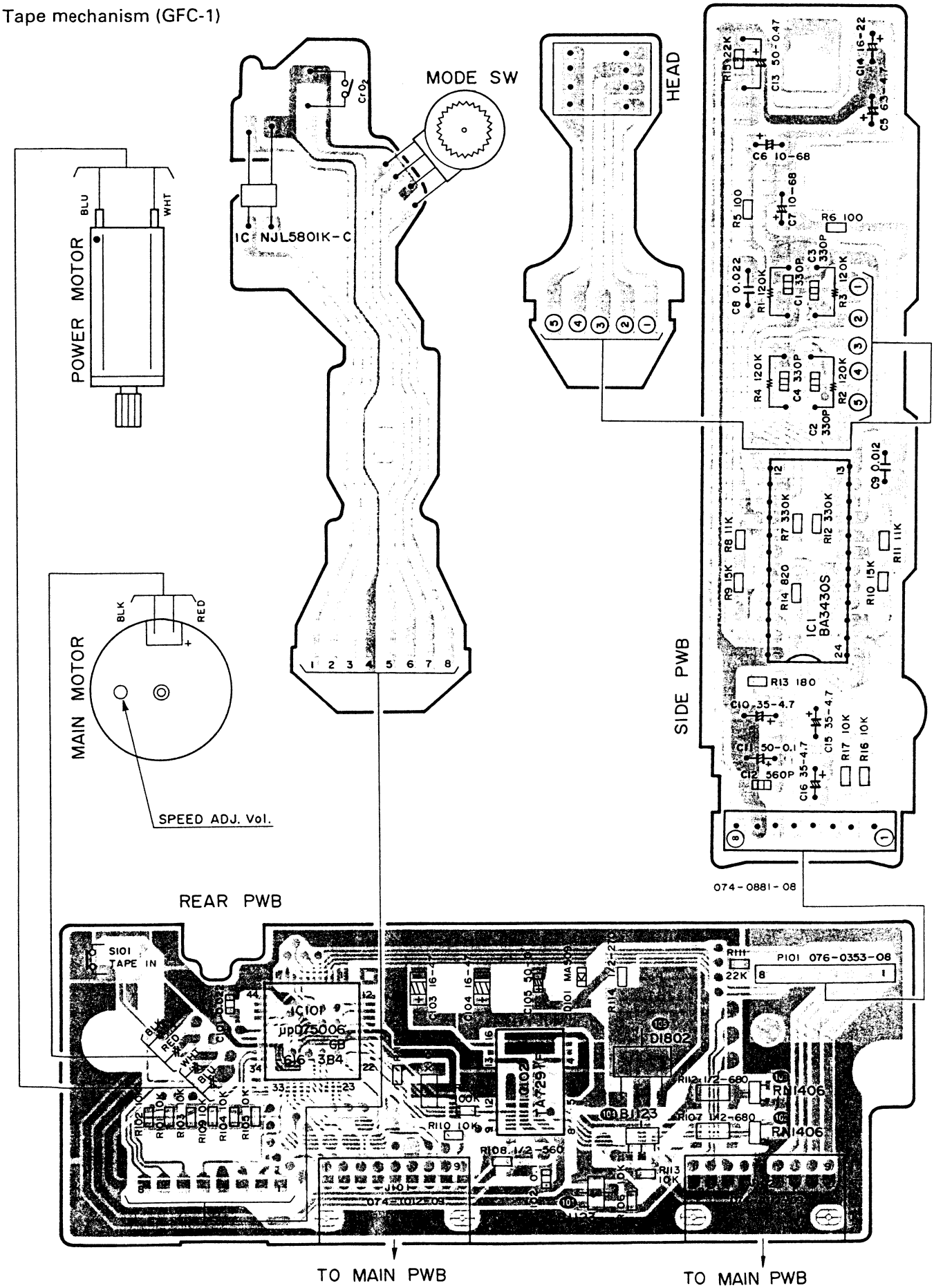
■ADJUSTMENT:

●TAPE MECHANISM SECTION

Item	Procedure	Instruments
Azimuth Adjustment	Make playback for the azimuth-tape (10kHz, −10VU), and turn each azimuth-adjusting screw to make each FWD & REV maximum. After adjustment, make adhesion with bond.	Milli-volt meter Azimuth-tape
Tape speed	Playback the test tape (3kHz, −10VU) and adjust the frequency counter value to be 3000Hz±45Hz with tape speed VR.	Freqency counter Wow flutter-tape (3kHz−10VU)

■CIRCUIT DIAGRAM:



■ PRINTED WIRING BOARD:

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